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Caption: Stripe-backed Weasel Mustela strigidorsa. Medium-digital, Software-procreate, Device-iPad + Apple pencil © Dhanush Shetty. Journal of Threatened Taxa | www.threatenedtaxa.org | 26 October 2021 | 13(12): 19855–19859 ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print) https://doi.org/10.11609/jott.7475.13.12.19855-19859 () #7475 | Received 28 May 2021 | Final received 02 August 2021 | Finally accepted 22 August 2021



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In the past, the Stripe-backed Weasel Mustela strigidorsa was considered to be rare (Lekagul & McNeely 1977; Burton & Pearson 1987; Treesucon 1989; Grassman et al. 2002) and was categorized as 'Vulnerable' in the 1996 IUCN Red List (Roberton et al. 2016).

Subsequently, Abramov et al. (2008) provided a comprehensive review of the animal's morphology, taxonomy, nomenclature, ecology, behaviour, and conservation status and listed over 100 distribution records from northeastern India, including Sikkim, Myanmar, southern China, northern Vietnam, Lao PDR, and northern Thailand. Contrary to Pocock (1941), Corbet & Hill (1992), and others, Nepal was omitted (with justifications). The paper concluded that it is possible that 'the species is neither particularly rare nor threatened, rather that it is an inconspicuous denizen of chronically under-surveyed regions.' It was recommended that 'all records, even single incidental ones, merit publication'.

Subsequent to Abramov et al. (2008), the Stripebacked Weasel was discovered in northeastern Cambodia (McCann & Pawlowski 2018), and additional records were contributed from Lao PDR (Streicher et al. 2010) and Thailand (Chutipong et al. 2014). A molecular study, which included M. strigidorsa, was undertaken by Kurose et al. (2008). Meanwhile, its IUCN status was downgraded in 2008 to 'Least Concern' (reconfirmed in 2016) on account of its widespread distribution, presumed large population, occurrence in many protected areas, apparent tolerance of habitat modification, and hunting pressure (Roberton et al. 2016).

In Myanmar, the Stripe-backed Weasel was omitted by Yin (1967). However, some of the earliest records of this species were from Myanmar, including the first outside Sikkim and, if valid, Nepal. Thomas (1891) listed a specimen collected from Thagata, 'east of Moulmein' (= Mawlamyine), adjacent to Mount Mooleyit (= Mulayit Taung). Today, Thagata is included in Kayin State but at that time, it was assigned to Tenasserim. This may explain the confusion with Lekagul and McNeely's (1977) distribution map, which includes the whole of present day Tanintharyi Region (= Tenasserim) and only

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105°0'0"E

19

Oo et al.

N

8

Z7°0'0"N

24°0'0"N

21°0'0"N

N..0.0-81

N...0.0.51

N"0'0°2

93°0'0"E

96°0'0"E

(16.083°N, 98.500°E). All records based on Abramov et al. (2008), except for locality 14 (new record).

N...0.0.8

N...0.0.5

2°0'0"N

Legend

180

102°0'0"E

0 45 90

99°0'0"E

Figure 1. Known distribution of the Stripe-backed Weasel Mustela strigidorsa in Myanmar. Kachin State: 1-no exact loc. 1-no exact loc. (28.000°N, 97.833°E); 2—Nam Tamai (27.900°N, 97.717°E); 3—Nam Tamai (27.867°N, 97.950°E); 4—no exact loc. (27.833°N, 97.717°E); 5—Nam Tamai (27.833°N, 97.800°E); 6—Nam Tamai (27.700°N, 97.900°E); 7—Makhungam (27.650°N, 98.233°E); 8—Gushin—1 (27.633°N, 98.217°E); 9—Nam Tamai (27.633°N, 98.033°E); 10—Tasa Hku (27.583°N, 97.867°E); 11—Lanzatu (27.517°N, 97.967°E); 12—Awaddam—2 (27.517°N, 97.150°E); 13—Nam Tamai (27.500°N, 97.500°E); 14—Atet San Kawng (27.433°N, 97.250°E); 15—Putao (27.350°N, 97.400°E); 16: Gam Majaw (27.717°N, 97.967°E); Chin State: 17–96 km west of Kindat (23.667°N, 93.833°E); 18–Paletwa (21.300°N, 92.850°E); Kayin State: 19–Thagata

River

365 - 836 836 - 1,410 1,410 - 2,441 2,441 - 5,747

270 360

Kilometers

105°0'0"E

Previous Record Recent Record **Elevation (Meter)** -51 - 365

(H)



Image 1. Two views of a Stripe-backed Weasel *Mustela strigidorsa* photographed 2km from Atet San Kawng Village, Putao Township, Hkakabo Razi Landscape, Kachin State (27.433°N, 97.250°E).

a '?' where Thagata is located (see Abramov et al. 2008; Chutipong et al. 2014).

Subsequent records from Myanmar are listed in the Appendix of Abramov et al. (2008) and include two localities in Chin State, based on material collected in 1914 and 1915, and a series of localities in Kachin State. Of the 24 Myanmar records listed by Abramov et al. (2008), 17 are for specimens held in the Natural History Museum, London [BMNH] (collected between 1914 and 1938), and one each for the collections of the Field Museum of Natural History, Chicago [FMNH] (collected in 1931) and the Museo Civico, Genoa (collected c. 1885– 1889), respectively. The remaining five are remains of dead animals, mostly skins, held by villagers in Kachin State, between 1997 and 2005.

The recent sighting of a single individual in Hkakabo Razi Landscape by TT represents the first observation of the species in Myanmar that includes photographs and video footage. It took place on 07 March 2019, at 0910 h, some 2 km from Atet San Kawng Village, Putao Township, Kachin State (27.433°N, 97.250°E) (Figure 1). The site has an elevation of c. 580 m. This elevation is lower than



Image 2. Habitat of the Stripe-backed Weasel *Mustela strigidorsa*, 2km from Atet San Kawng Village, Kachin State, Myanmar.

most other records from Myanmar, which have a range of 90 to 2,135 m and median score of 1,220 m. However, it is more consistent with those from Thailand, Lao PDR, and Vietnam, which when combined, have a range of 130 to 1,750 m (n= 26) and a median of 800 m (data are taken from Abramov et al. 2008). Geographically, the new location lies within the known distribution of the species in Kachin. In Myanmar, except for two specimens from Paletwa, western Chin State (Locality 18 in Figure 1), all the records are from the mountainous areas in the west, north, and east of the country. To date, none has been found in the central areas of the Ayeyarwady and Chindwin river basins (Figure 1).

The photographs show the characteristic pelage of this species, and in particular the diagnostic narrow, almost white stripe that runs from the crown of the head to the base of the tail (Image 1). The video shows a single animal foraging through undergrowth on the ground, searching among dried leaves and litter (Video 1). This seems typical of the species, which is reported elsewhere as being primarily solitary and diurnal in its habits (Streicher et al. 2010; Hobcroft 2011; Coudrat et al. 2014). The area is thickly vegetated and is located in the foothills of a forested mountain range, approximately 20 m from a stream (Image 2). The evergreen forest comprises large trees, shrubs, and bamboo thicket, dominated by Shorea spp., Dipterocarpus spp., and Bambusa spp. The climate is subtropical. Although there is considerable local variation in average temperature and rainfall, in Putao (which is situated close-by) the mean annual temperature is c. 27 °C and the mean annual rainfall is 349 mm (Aung et al. 2017). The video footage complements a previous video by Andy Merk in 2016 in Phu Kieo Wildlife Sanctuary, Thailand, which was posted on Youtube (https://www.youtube.com/ watch?v=-sLLUPAvigg). This latter video shows a Stripebacked Weasel coming to a pool to drink.

The recent photographs are some of very few taken

Oo et al.

🏸 Sighting of Stripe-backed Weasel in Hkakabo Razi Landscape, Myanmar

Image: Contract of the second seco

Video 1. Video of Stripe-backed Weasel *Mustela strigidorsa* foraging through undergrowth, 2km from Atet San Kawng Village, Hkakabo Razi Landscape. © Tun Tun.

of the animal in the wild, other than by camera-trap, and the first for Myanmar. As with reports from elsewhere in its range (Abramov et al. 2008), the Myanmar individual appears to be either unaware of the presence of humans or not particularly shy. It approached within 5 m of TT and stayed in the area for a considerable period of time. To date, this species has not recorded in camera traps in Myanmar (Zaw et al. 2008). This reflects a similar situation elsewhere in its range (Abramov et al. 2008; Datta et al. 2008; Hunter & Barrett 2018), with single published camera trap records for Lao PDR (Streicher et al. 2010) and Cambodia (McCann & Pawlowski 2018), respectively.

The population status of the Stripe-backed Weasel in Myanmar is not known. However, villagers reported it to be locally common in Kachin (Rabinowitz & Khaing 1998). This anecdotal evidence corresponds to reports in other countries, where villagers also suggest it is at least locally common (Abramov et al. 2008). It is mostly impossible to verify the identifications. Unlike earlier reports from China (Roberton et al. 2016), there is no evidence in Myanmar that it is hunted, although individuals, especially those that depredate domestic chickens, may be trapped and killed by villagers (Zaw et al. 2008). Unlike Lao PDR (Hansel & Tizard 2016), in Myanmar there are no reports of this species being sold in markets.

The incidental sighting reinforces the view that Hkakabo Razi Landscape is a refuge for rich biodiversity, including mammals (Rabinowitz & Khaing 1998; Bates et al. 2021) and birds (Renner et al. 2015). It is also important for a species that is not well covered by camera-trap by-catch (for example from Tiger surveys and monitoring) and for which there is no form of monitoring program anywhere in its range. Therefore, further study of this small carnivore species in Myanmar would be of much interest.

References

- Abramov, A.V., J.W. Duckworth, Y.X. Wang & S.I. Roberton (2008). The striped-backed weasel *Mustela strigidorsa*: taxonomy, ecology, distribution and status. *Mammal Review* 38(4): 247–266. https:// doi.org/10.1111/j.1365-2907.2008.00115.x
- Aung, L.L., E.E. Zin, P. Theingi, N. Elvera, P.P. Aung, T.T. Han, Y. Oo & R.G. Skaland (2017). Myanmar Climate Report. Department of Meteorology and Hydrology, Yangon, Myanmar, 105pp.
- Bates, P.J.J., P. Soisook, S.S.L. Oo, M. Suarez-Rubio, A. Pimsai, A. Dejtaradol & S. Renner (2021). Intact forests of Hkakabo Razi are a hotspot of bat diversity in Southeast Asia. *Oryx* 55(5): 1–6. https://doi.org/10.1017/s0030605320000630
- Burton, J.R. & B. Pearson (1987). Collins Guide to the Rare Mammals of the World. William Collins Sons & Co, London, 240pp.
- Chutipong, W., N. Tantipisanuh, D. Ngoprasert, A. Lynam, R. Steinmenz, K.E. Jenks, L.I. Grassman Jr, M. Tewes, S. Kitamura, M.C. Baker, W. McShea, N. Bhumpakphan, R. Sukmasuang, G.A. Gale, F.K. Harich, A.C. Treydte, P. Cutter, P.B. Cutter, S. Suwanrat, K. Siripattaranukul, Hala-Bala wildlife research station, Wildlife research division & J.W. Duckworth (2014). Current distribution and conservation status of small carnivores in Thailand: a baseline review. Small Carnivore Conservation 51: 96–136.
- Corbet, G.B. & J.E. Hill (1992). *The Mammals of the Indomalayan Region*. Natural History Museum Publications, Oxford University Press, Oxford, 488pp.
- Coudrat, C.N.Z., C. Nanthavong, S. Sayavong, A. Johnson, J.B. Johnston & W.G. Robichaud (2014). Conservation importance of Nakai-Nam Theun National Protected Area, Laos, for small carnivores based on camera trap data. *Raffles Bulletin of Zoology* 62: 31–49.
- Datta, A., R. Naniwadekar & M.O. Anand (2008). Occurrence and conservation status of small carnivores in two protected areas in Arunachal Pradesh, north-east India. *Small Carnivore Conservation* 39: 1–10.
- Grassman, Jr, L.I., K. Kreetiyutanont & M.E. Tewes (2002). The backstriped weasel *Mustela strigidorsa* Gray, 1853 in northeastern Thailand. *Small Carnivore Conservation* 26: 2.
- Hansel, T.E. & R.J. Tizard (2006). Stripe-backed weasel Mustela strigidorsa for sale as traditional medicine in Lao PDR. Small Carnivore Conservation 34/35: 38.
- Hobcroft, D. (2011). A sighting of stripe-backed weasel Mustela strigidorsa at Doi Lang, Thailand. Small Carnivore Conservation 44: 34.
- Hunter, L. & P. Barrett (2018). A Field Guide to Carnivores of the World. 2nd Edition. Bloomsbury Wildlife. London, 272pp.
- Kurose N., A.V. Abramov & R. Masuda (2008). Molecular phylogeny and taxonomy of the genus *Mustela* (Mustelidae, Carnivora), inferred from mitochondrial DNA sequences: new perspectives on phylogenetic status of the back-striped weasel and American mink. *Mammal Study* 33(1): 25–33. https://doi.org/10.3106/1348-6160(2008)33[25:MPATOT]2.0.CO;2
- Lekagul, B. & J.A. McNeely (1977). Mammals of Thailand (1988 reprint). Darnsutha Press, Bangkok, Thailand, 758pp.
- McCann, G. & K. Pawlowski (2018). First record of Stripe-backed Weasel Mustela strigidorsa in Cambodia. Small Carnivore Conservation 56: 18–21.
- Pocock, R.I. (1941). The Fauna of British India, including Ceylon and Burma. Mammalia, 2nd Edition, Vol. II. Taylor & Francis, London.
- Rabinowitz, A. & S.T. Khaing (1998). Status of selected mammal species in North Myanmar. *Oryx* 32(3): 201–208. https://doi.org/10.1046/j.1365-3008.1998.d01-37.x
- Renner, S.C., J.H. Rappole, C.M. Milensky, M. Aung, N.M. Shwe & T. Aung (2015). Avifauna of the Southeastern Himalayan Mountains

Sighting of Stripe-backed Weasel in Hkakabo Razi Landscape, Myanmar

and neighboring Myanmar hill country. Bonn Zoological Bulletin, Supplementary 62: 1–75.

- Roberton, S., J.W. Duckworth, R.J. Timmins, A.V. Abramov, W. Chutipong, A. Choudhury, D.H.A. Willcox & V. Dinets (2016). *Mustela strigidorsa*. The IUCN Red List of Threatened Species 2016: e.T14027A45201218. Downloaded on 2 August 2021. https://doi. org/10.2305/IUCN.UK.2016-1.RLTS.T14027A45201218.en
- Streicher, U., J.W. Duckworth, & W.G. Robichaud (2010). Further records of stripe-backed weasel *Mustela strigidorsa* from Lao PDR. *Tropical Natural History* 10: 199–203.

Thomas, O. (1891). On the mammals collected by Signor Leonardo Fea

in Burma and Tenasserim. *Annali del Museo Civico di storia naturale di Genova*, Series 2(10): 913–949.

- Treesucon, U. (1989). A sighting of the back-striped weasel (Mustela strigidorsa) in northern Thailand. Natural History Bulletin of the Siam Society 37(2): 253–254.
- Yin (1967). Wild Animals of Burma (1988 reprinting). Rangoon Gazette Ltd, Rangoon, 301 pp.
- Zaw, T., S. Htun, S.H.T. Po, M. Maung, A.J. Lynam, K. T. Latt, & J.W. Duckworth (2008). Status and distribution of small carnivores in Myanmar. *Small Carnivore Conservation* 32: 2–28.

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Articles

Roosting habits and habitats of the Indian Flying Fox Pteropus medius Temminck, 1825 in the northern districts of Tamil Nadu, India – M. Pandian & S. Suresh, Pp. 19675–19688

Diversity and distribution of avifauna at Warathenna-Hakkinda Environmental Protection Area in Kandy, Sri Lanka

 – Dinelka Thilakarathne, Tithira Lakkana, Gayan Hirimuthugoda, Chaminda Wijesundara & Shalika Kumburegama, Pp. 19689–19701

Grass species composition in tropical forest of southern India

- M. Ashokkumar, S. Swaminathan & R. Nagarajan, Pp. 19702–19713

Communications

Habitat use and conservation threats to Wild Water Buffalo Bubalus arnee (Mammalia: Artiodactyla: Bovidae) in Koshi Tappu Wildlife Reserve, Nepal – Reeta Khulal, Bijaya Neupane, Bijaya Dhami, Siddhartha Regmi, Ganesh Prasad Tiwari & Manita Parajuli, Pp. 19714–19724

Get my head around owls: people perception and knowledge about owls of Andaman Islands

– Shanmugavel Sureshmarimuthu, Santhanakrishnan Babu, Nagaraj Rajeshkumar & Honnavalli Nagaraj Kumara, Pp. 19725–19732

Abundance and diversity of threatened birds in Nangal Wetland, Punjab, India – Rajwinder Kaur & Onkar Singh Brraich, Pp. 19733–19742

Evaluation of fish diversity and abundance in the Kabul River with comparisons between reaches above and below Kabul City, Afghanistan

– Ugyen Kelzang, Ahmad Farid Habibi & Ryan J. Thoni, Pp. 19743–19752

New record of *Myrmarachne melanocephala* MacLeay, 1839 (Araneae: Salticidae) from Jharkhand, India and biogeographical implications of the co-occurrence of its ant model *Tetraponera rufonigra* Jerdon, 1851

- Rahul Kumar, Mirtunjay Sharma & Ajay Kumar Sharma, Pp. 19753-19761

Diversity of spiders (Arachnida: Araneae) and the impact of pruning in Indian sandalwood plantations from Karnataka, India

– S. Padma 1 & R. Sundararaj, Pp. 19762–19772

New records of cheilostome Bryozoa from the eastern coast of India encrusting on the exoskeleton of live horseshoe crabs of Indian Sundarbans

 – Swati Das, Maria Susan Sanjay, Basudev Tripathy, C. Venkatraman & K.A. Subramanian, Pp. 19773–19780

On the pteridophytes of Bherjan-Borajan-Padumoni Wildlife Sanctuary, Assam, India – Pranjal Borah & Jayanta Barukial, Pp. 19781–19790

Population status of *Heritiera fomes* Buch.-Ham., a threatened species from Mahanadi Mangrove Wetland, India

– Sudam Charan Sahu, Manas Ranjan Mohanta & N.H. Ravindranath, Pp. 19791–19798

Additions to the lichenized and lichenicolous fungi of Jammu & Kashmir from Kishtwar High Altitude National Park

 Vishal Kumar, Yash Pal Sharma, Siljo Joseph, Roshinikumar Ngangom & Sanjeeva Nayaka, Pp. 19799–19807

Short Communications

Is release of rehabilitated wildlife with embedded lead ammunition advisable? Plumbism in a Jaguar *Panthera Onca* (Mammalia: Carnivora: Felidae), survivor of gunshot wounds – Eduardo A. Díaz, Carolina Sáenz, E. Santiago Jiménez, David A. Egas & Kelly Swing, Pp. 19808–19812

New record of the Sewing Needle Zipper Loach *Paracanthocobitis linypha* Singer & Page, 2015 (Teleostei: Cypriniformes: Nemacheilidae) from the Chindwin drainage of Manipur, India

- Yumnam Rameshori, Yengkhom Chinglemba & Waikhom Vishwanath, Pp. 19813-19817

Field identification characters to diagnose *Microhyla mukhlesuri* from closely related *M. mymensinghensis* (Amphibia: Microhylidae) and range extension of *M. mukhlesuri* up to West Bengal State, India

- Suman Pratihar & Kaushik Deuti, Pp. 19818-19823

First report of *Scipinia horrida* (Stål) (Heteroptera: Reduviidae) from Assam, with comments on related genus *Irantha* Stål – Anjana Singha Naorem, Santana Saikia, Anandita Buragohain, Rubina Azmeera Begum, Swapnil S. Boyane & Hemant V. Ghate, Pp. 19824–19830

Flesh fly (Diptera: Sarcophagidae): male terminalia, diversity and expanded geographical distribution from India

– Kanholi Sreejith, Shuvra Kanti Sinha, Santanu Mahato & Edamana Pushpalatha, Pp. 19831– 19836

Checklist of moths (Heterocera) of Tadong, Sikkim, India

- Prayash Chettri, Yuki Matsui, Hideshi Naka & Archana Tiwari, Pp. 19837-19848

New distribution records of *Begonia* L., *B. murina* Craib and *B. poilanei* Kiew (Begoniaceae: Cucurbitales) for Laos

– Phongphayboun Phonepaseuth, Phetlasy Souladeth, Soulivanh Lanorsavanh, Shuichiro Tagane, Thyraphon Vongthavone & Keooudone Souvannakhoummane Pp. 19849–19854

Notes

A recent sighting of the Stripe-backed Weasel *Mustela strigidorsa* (Mammalia: Carnivora: Mustelidae) in Hkakabo Razi Landscape, Myanmar

– Sai Sein Lin Oo, Tun Tun, Kyaw Myo Naing & Paul Jeremy James Bates, Pp. 19855–19859

Are the uplifted reef beds in North Andaman letting nesting Olive Ridley Sea Turtle Lepidochelys olivacea stranded?

– Nehru Prabakaran, Anoop Raj Singh & Vedagiri Thirumurugan, Pp. 19860–19863

First record of the orb-weaving spider Araneus tubabdominus Zhu & Zhang, 1993 (Araneae: Araneidae) from India

– Souvik Sen, John T.D. Caleb & Shelley Acharya, Pp. 19864–19866

The genus Catapiestus Perty, 1831 (Coleoptera: Tenebrionidae: Cnodalonini) from Arunachal Pradesh with one new record to India – V.D. Hegde & Sarita Yadav, Pp. 19867–19869

Rediscovery and extended distribution of *Indigofera santapaui* Sanjappa (Leguminosae: Papilionoideae) from the states of Maharashtra and Gujarat, India – Kumar Vinod Chhotupuri Gosavi, Sanjay Gajanan Auti, Sharad Suresh Kambale & Munivenkatappa Sanjappa, Pp. 19870–19873

Additional distribution records of *Ceropegia anjanerica*, an endemic and 'Endangered' lantern flower of the northern Western Ghats, India

 Samir Shrikant Maity, Ajay Natha Gangurde, Sharad Suresh Kambale, Avinash Ramchandra Gholave, Avinash Asraji Adsul, Ganesh Babaso Pawar & Kumar Vinod Chhotupuri Gosavi, Pp. 19874–19877

Notes on the extended distribution of *Impatiens megamalayana*, a recently described balsam in Western Ghats, India

– Anoop P. Balan & A.J. Robi, Pp. 19878–19883

Book Review

A look over on the scented tree of India (Santalum album) - S. Suresh Ramanan & A. Arunachalam, Pp. 19884–19886

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